A new species of *Mariosousa* (Fabaceae: Mimosoideae) from Northwestern Mexico

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ABSTRACT

Specimens of *Mariosousa gentryi* Seigler and Ebinger were originally thought to be hybrids of *M. heterophylla* (Benth.) Seigler & Ebinger and *M. russelliana* (Britton & Rose) Seigler & Ebinger as the putative parents. These proposed parental taxa have relatively narrow geographic ranges and are only marginally sympatric in central and northern Sonora, Mexico. We have observed numerous specimens of both species from throughout their ranges, and the specimens described below from the state of Sinaloa are the few we have seen that we originally thought might be hybrids. These specimens are restricted to a small area of northern Sinaloa in the general vicinity of the cities of Bahía Topolobampo and Los Mochis, more than 100 km south of the present known range of *M. heterophylla* but within the southern portion of the range of *S. russelliana* in northern Sinaloa. *Published online www.phytologia.org Phytologia 103(3):69-72 (September 27, 2021). ISSN 030319430.*

KEY WORDS: Fabaceae, *Mariosousa gentryi,* sp. nov., *M. heterophylla*, *M. russelliana*, Sinaloa, Sonora.

The genus *Mariosousa,* now consisting of 14 taxa, was recognized as distinct from the large genus *Acacia* s.l., when Jawad et al. (2000 [2001]) published a systematic treatment of the *Acacia coulteri* species group from the New World. Later, Seigler et al. (2006) transferred 12 species of this *Acacia* group to the newly described genus *Mariosousa. Mariosousa willardiana* was transferred to the genus (Seigler et al., 2006) and subsequently considered a synonym of *M. heterophylla.* (Seigler & Ebinger, 2018). Members of *Mariosousa* are erect shrubs or trees that lack prickles or spines, have persistent stipules, and flowers in cylindrical spikes. Also, except for minor differences in flower size and pubescence, flowers are quite similar, being 5-merous with tubular to cup-shaped calyx and corolla, numerous separate stamens that usually possess anther glands, and a single short-stalked pistil. The species of this genus are common throughout Mexico and much of Central America, with one species, *Mariosousa millefolia* (S. Watson) Seigler & Ebinger, entering Arizona and New Mexico.

Mariosousa gentryi Seigler & Ebinger **sp. nov. - TYPE:** MEXICO. SINALOA: Small tree with yellow peeling bark, rocky volcanic slopes with coastal thorn forest, Cerros de Navachiste about Bahía Topolobampo, 26-30 Sep 1954, *H.S.Gentry 14337* (holotype: MICH; isotypes: LL, US) (Fig. 1).

DIAGNOSIS

Specimens of *Mariosousa gentryi* resemble *M. heterophylla* in being small trees with exfoliating, papery bark, having petioles that sometimes exceed 100 mm in length, leaflets fewer than 26 pairs per pinna, and some pinnae that exceed 55 mm in length. They differ from those of *M. heterophylla* in the number of pinna pairs (2-7 vs. 0 to rarely 2 or 3) and stipules (3-5 mm vs. 0.5-1.1 mm). Plants of *M. gentryi* are similar to *M. russelliana* in having stipules 3-5 mm long, petioles that are shallowly grooved, and leaves with up to seven pinna pairs, but differ in that *M. russelliana* has dark-gray, shallowly-furrowed bark,

petiolar glands are usually present, leaflet pairs 0.9-1.8 mm apart (vs. 1.8-3.3 mm), and stamen filaments 4.5-6.5 mm (vs. 7.0-9.0 mm).

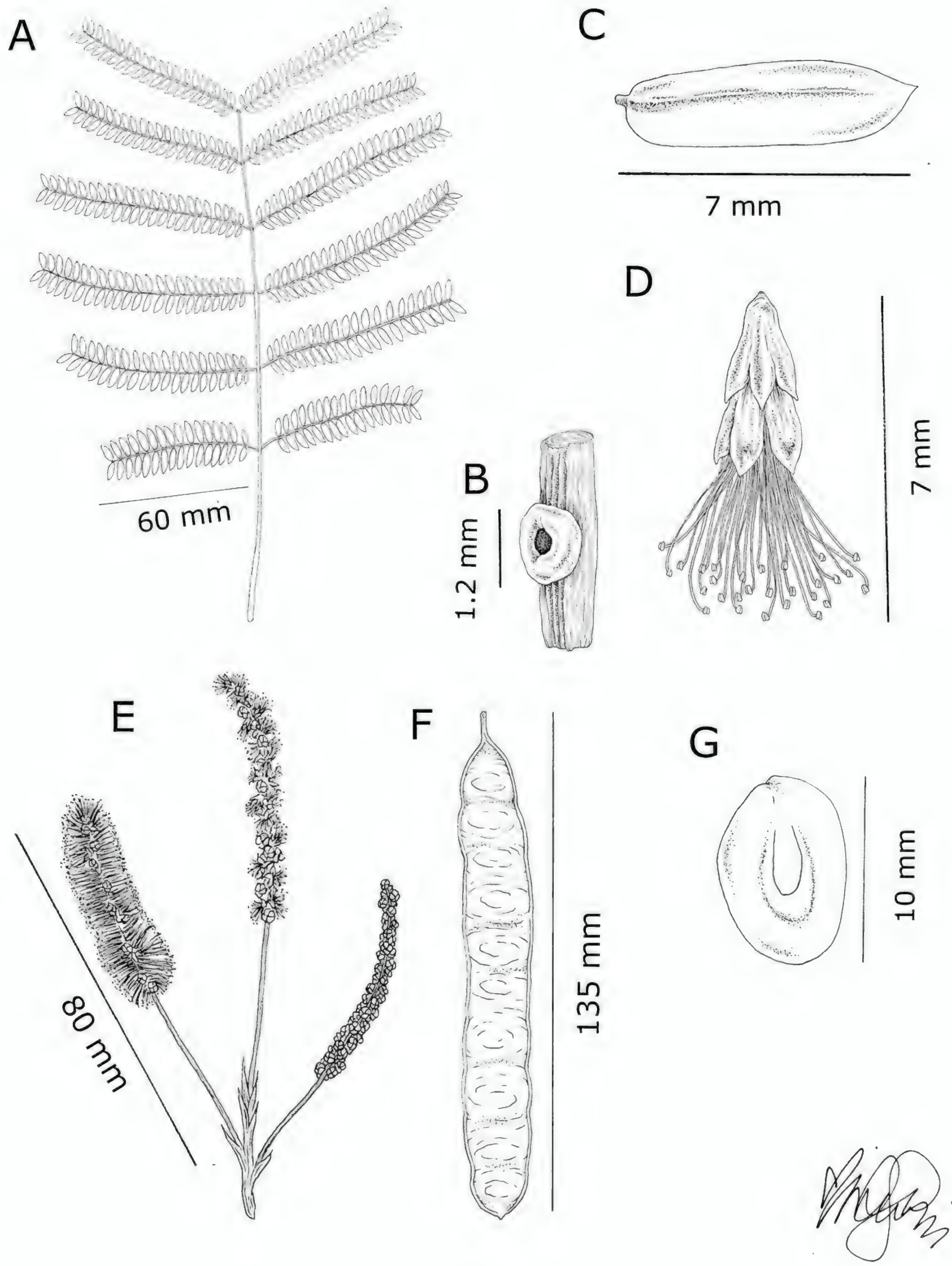

Fig. 1. *Mariosousa gentry* Seigler & Ebinger; A. Leaf; B. Petiolar gland; C. Leaflet; D. Flower; E. Pseudo-inflorescence; F. Fruit; G Seed. A, B, C, F, G from the holotype *Gentry 14337* (MICH); D, E from *Gibson & Gibson 2101* (ASU) A-G illustrated by Veronica Severini.

DESCRIPTION

Small **tree**; bark smooth, yellowish, exfoliating, and papery; twigs light brown to greenish brown, becoming dark reddish purple, not flexuous, glabrous to puberulent; short shoots absent. **Leaves** alternate, 30-220 mm long; stipules narrowly linear, 2-5 x 0.2-0.4 mm near the base, glabrous, persistent; petiole shallowly grooved to nearly terete in cross section, 20-130 mm long, glabrous, minute purple glands absent; petiolar gland usually absent, sometimes located between the lowermost pinna pair, sessile, circular, 0.5-1.2 mm across, globose to doughnut-shaped, glabrous; rachis not grooved, 30-130 mm long, glabrous, minute purple glands absent, a small globose gland 0.3-0.8 mm across between the uppermost, and sometimes lower pinna pairs; pinnae 2 to 7 pairs/leaf, 40-80 mm long, 4-40 mm between pinna pairs; paraphyllidia 0.6 mm long, commonly absent; petiolule 3-6 mm long; leaflets 15 to 25 pairs/pinna, opposite, 1.8-3.3 mm between leaflet pairs, oblong to elliptic, 4.5-10.0 x 0.9-2.2 mm, glabrous, lateral veins not obvious, only to rarely three veins from the base, margins not ciliate, apex narrowly acute to acuminate, midvein subcentral. **Inflorescence** a loosely flowered cylindrical spike 40-80 mm long, solitary (rarely 2) from the leaf axil; peduncle 8-20 x 0.5-0.8 mm, puberulent; floral bracts linear, to 1.2 mm long, glabrous to lightly pubescent, early deciduous. **Flower** sessile, creamy white, calyx 1.4-2.0 mm long, lightly appressed pubescent; corolla 2.4-3.2 mm long, lightly appressed pubescent; stamen filaments 7.0-9.0 mm long; stipe of ovary to 0.1 mm long. **Legumes** 50-140 x 13-20 mm, chartaceous, transversely to irregularly striate, glabrous, eglandular; stipe to 11 mm long; apex obtuse to acute. **Seeds** oval to nearly circular, 6.4-11.0 x 4.5-8.0 mm, dark purplish brown; pleurogram U-shaped, 2.5 mm across.

Phenology: Flowering July.

Local Names: None known.

Conservation Status: Considering the lack of material, we consider the status of this taxon to be Data Deficient (IUCN, 2001).

Distribution: Arid hills, rocky slopes, and thorn-scrub forests at lower elevations in northern Sinaloa, Mexico, near Los Mochis and Bahía Topolobampo.

Etymology: *Mariosousa gentryi* is named for Howard Scott Gentry (1903-1993), a leading authority on agaves, a distinguished economic botanist, and collector of the type specimen.

Specimens examined: MEXICO: Sinaloa: small tree with light gray branches and yellowish papery bark on trunk, Bahía Topolobampo in the Sierra Navachiste, 5 Jan 1952, *H.S.Gentry 11432* (LL); slender trees with crooked trunks with yellow peeling bank and lightly bending feathery foliage, rocky volcanic slopes with coastal thorn forest, Canyon Diablo, Cerros del Fuerte, 18-24 miles N of Los Mochis, 200-1000 ft., 3-5 Oct 1954, *H. S. Gentry 14420* (MICH); hillside with native vegetation, dry, above mangrove swamp in Topolobampo, 17 Jul 1971, *A.C.Gibson & L.C.Gibson 2101* (ARIZ, ASU); dry rocky hills, vicinity of Topolobampo, 23 Mar 1910, *J.N.Rose, P.C.Standley & G.Russell 13317* (US); bosque espinoso, Mpio. de Ahome, Topolobampo a Maviri, 5-30 m, 20 Feb 1992, *R.Vega A. & A.Hernández V. 4220* (MEXU).

DISCUSSION

We originally considered *Mariosousa gentryi* Seigler & Ebinger to be of hybrid origin with *M. heterophylla* (Benth.) Seigler & Ebinger and *M. russelliana* (Britton & Rose) Seigler & Ebinger being the putative parents (Jawad et al. 2000: 547). However, *M. heterophylla* is restricted to north-central and western central Sonora, well north of the range of *M. gentryi* which is found only in northern Sinaloa, Mexico. We have observed numerous specimens of the two putative parent species from throughout their ranges. Only a few specimens of this new taxon were available for study, none of which come from an area where *M. heterophylla* is known to occur. The range of *M. gentryi* overlaps that of *M. russelliana* in northern Sinaloa. Specimens of *M. gentryi* share morphologically similarities to *M. russelliana* and *M. heterophylla*, and are intermediate in some characteristics, which might suggest a hybrid origin. Being restricted to a small area of northern Sinaloa in the general vicinity of the town of Bahía Topolobampo and Los Mochis, *M. gentryi* is more than 100 km south of the present known range of *M. heterophylla*. Also, mature seeds were observed on some of the specimens (e.g., *Gibson & Gibson 2101* at ASU), indicating

that this taxon is probably not sterile. Thus, we conclude that *M. gentryi* represents a distinct species with a limited geographic distribution. More information, including field work and DNA analysis, will be necessary to further support the status of this taxon.

At the present time we have seen more than 125 specimens of *Mariosousa russelliana* from throughout its range in Sinaloa, and Sonora, Mexico. The majority of these specimens are from eastern and southern Sonora; only about 10 are from Sinaloa. It appears to be a common species of dry, deciduous, tropical forests and thorn-scrub and desert-scrub vegetation, mostly on rocky slopes, from near sea level to about 700 m elevation. *Mariosousa heterophylla,* in contrast, appears to be endemic to the state of Sonora, Mexico (Jawad et al. 2000[2001]; Rico Arce 2007). This species is commonly found growing on arid hills, rocky slopes and washes in desert scrub vegetation between sea level and 500 m elevation. We have examined in excess of 150 specimens of this species and have located no naturally occurring material from outside the state of Sonora, Mexico. As far as we can determine, the specimens of *M. heterophylla* examined are from the northern and western portions of the state of Sonora, none being found near or south of the Sonora/Sinaloa border. All specimens of *M. gentryi* examined are from the vicinity of the towns of Bahía Topolobampo and Los Mochis in the northern part of the state of Sinaloa, Mexico, located about 50 km south of the Sonora/Sinaloa border, approximately 100 km south of the known range of *M. heterophylla.*

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